Defense Information Systems Agency

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Voice Services Update DRSN/VoSIP/Mobility

21 June 2011

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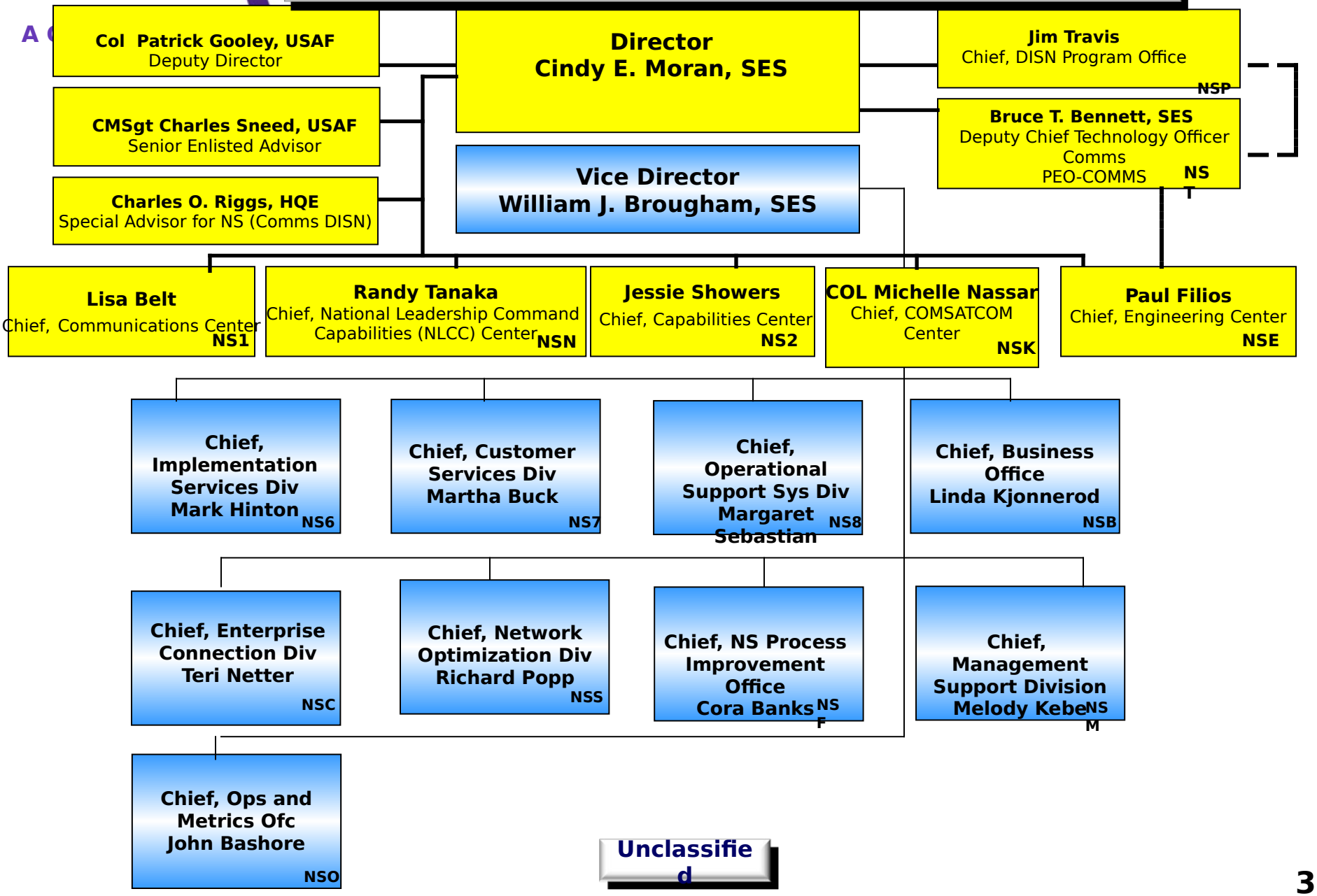
Agenda

- Organization
- DRSN
  - Modernization Update
  - Performance
  - Future of Secure Voice
- VoSIP
  - Update
  - Initiatives/Enhancements
  - Performance
- Mobility
  - SME PED Architecture
  - Performance
  - Future

Network Services (NS)



Unclassified

NS22 – Voice Services Division

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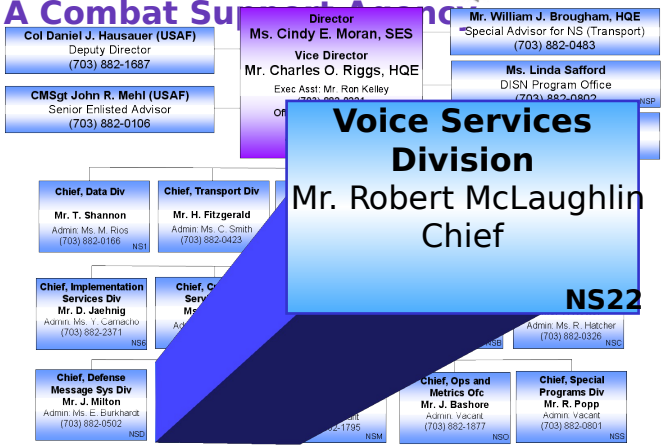
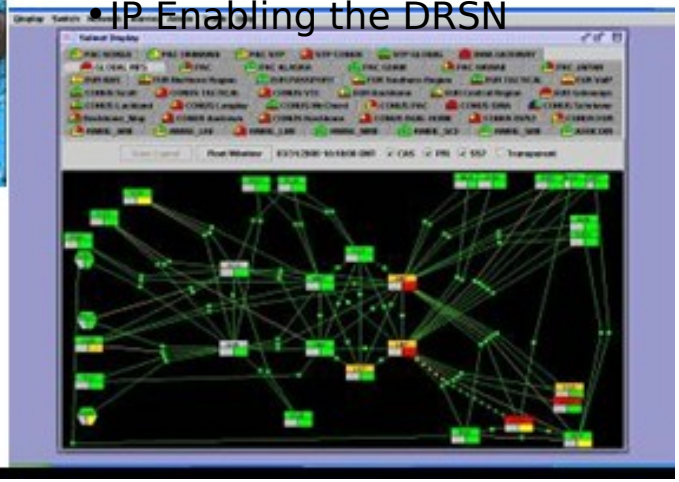


FUNCTIONS/CONTRIBUTIONS

- Global Network System Management (DSN & DRSN)
  - Includes Ntwk Ops & Sustain
  - Includes Design, Impl, & Transition
  - Includes Dev & Ops Engineering
  - Includes Performance Monitoring
- Additional Supported Networks
  - Voice over Secure IP (VoSIP)
  - Enhanced Pentagon Capability (EPC)
  - Survivable Emergency Conferencing Network (SECN)
  - Secure Mobile Environment Portable Electronic Device (SME PED)
- International Stds Committee – Sec



MAJOR PROJECTS

- DSN reconfiguration to support force restructuring
- Service/Agency DRSN Switch Replacement
- DRSN Switch Modernization (Phase III development)
- DSN Global Signaling Transfer Point (STP) reduction
- Network Upgrades (MFS to MFSS)
- Mobility
- SECN Backup fielding
- Presidential & National Voice Conferencing (PNVC)
- VoSIP Tech Refresh
- IP Enabling the DRSN

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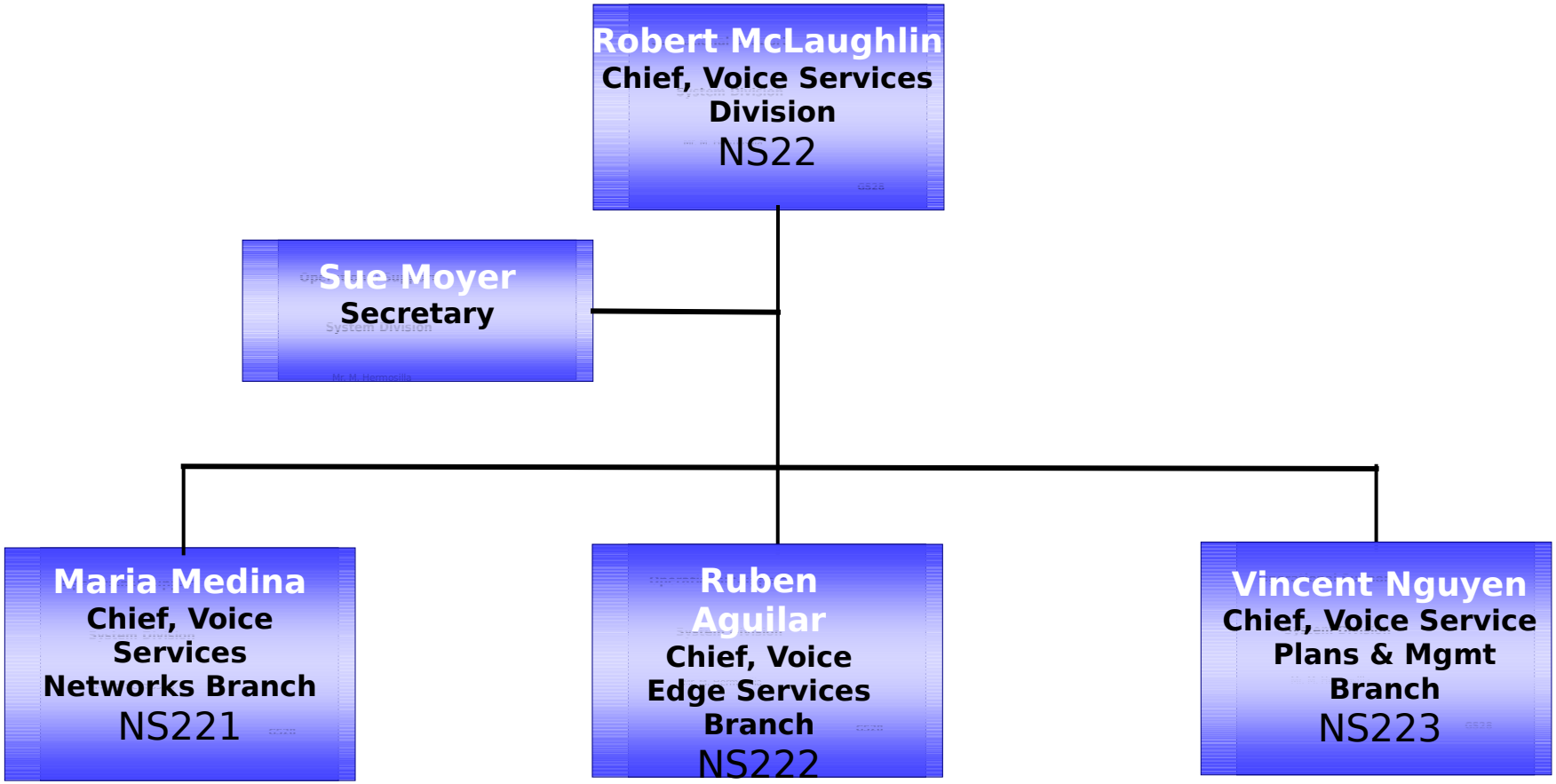
Voice Services Division



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DRSN Secure Voice Switch: DSS-2A

SDS-1

DSS-2

DSS-1

DSS-2A replaces all earlier models

Single Chassis version has been fielded since 2006

Final version with up to four chassis, distributed operation: Four Chassis (4 Network Elements) appear as a single switch (co-located or distributed over a campus network). Development completed and under test, expected availability late Summer/Fall 2011.

Switch Capacities

3584 User Ports (896 per Chassis)

2048 Simultaneous Conferences

Preserves all current features and functions including

Multi-level security

Rapid conferencing/conference management

Gateway interfaces (VoSIP/SATCOM/SCIP devices/LOS secure radio systems)

Information Assurance enhancements

DSS-2A

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Future Of Secure Voice

- **OSD NII and Joint Staff working to update secure voice requirements as replacement for 1992 DRSN ORD**
- **Reduce the DRSN footprint and increase VoSIP**
  - **DRSN provides some unique capabilities (Multi Level Security (MLS), C2 large conferencing, and tailored conference management capabilities) – not supported in IP today**
  - **Secure voice capability can be supported by VoSIP as a means for SECRET voice only and DRSN long locals for higher security voice requirements.**
    - **JS supporting a JSAP effort for concurrence by the MILDEP's**
- **IP enabling of the DRSN Network**
  - **IP enable the DSS-2A – 15 to 18 month development effort**
  - **$5.2M funded over three Fiscal Years**
  - **Implements a new board with embedded hardware and software that translates digital TDM voice to and from IP while preserving the separation and handling that allows multilevel security.**

DRSN Performance Metrics

May 2010– May 2011

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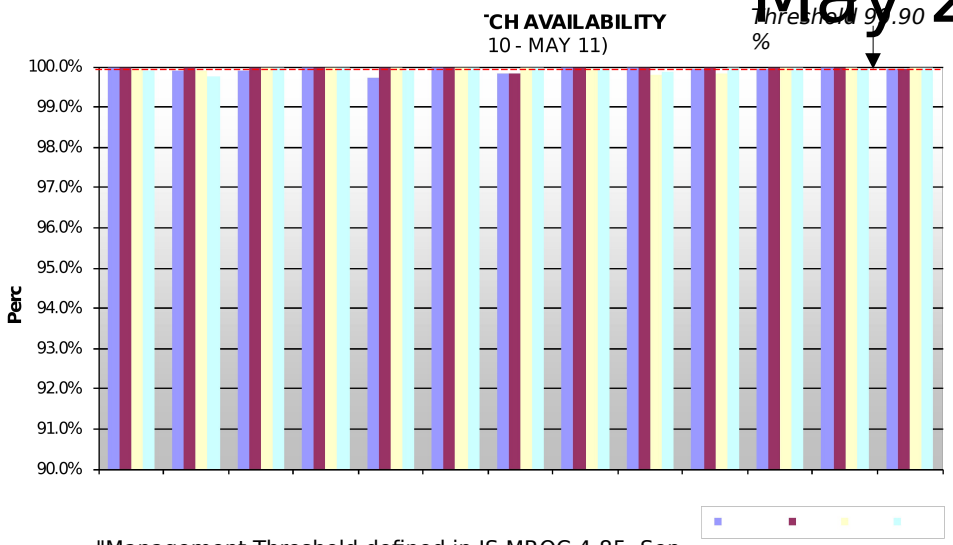
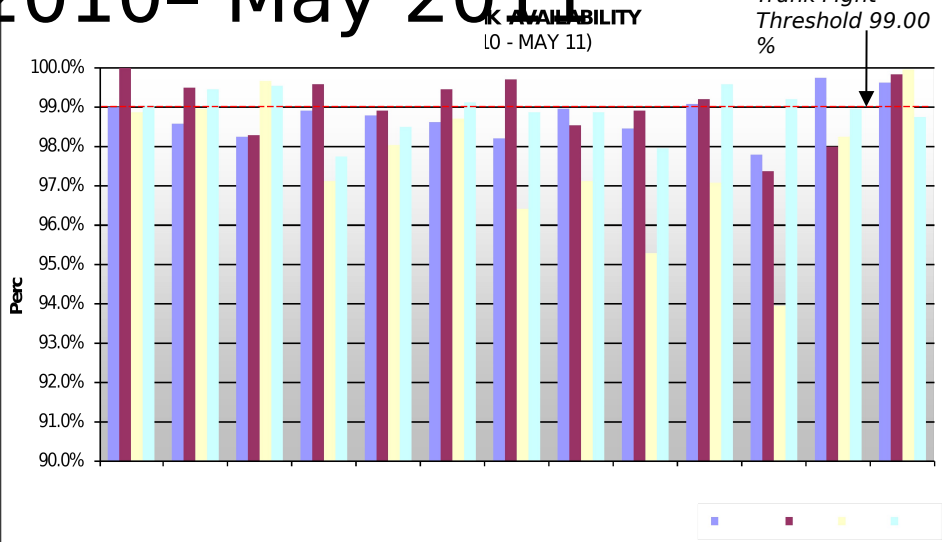


"Management Threshold defined in JS MROC 4-85, Sep 1986"



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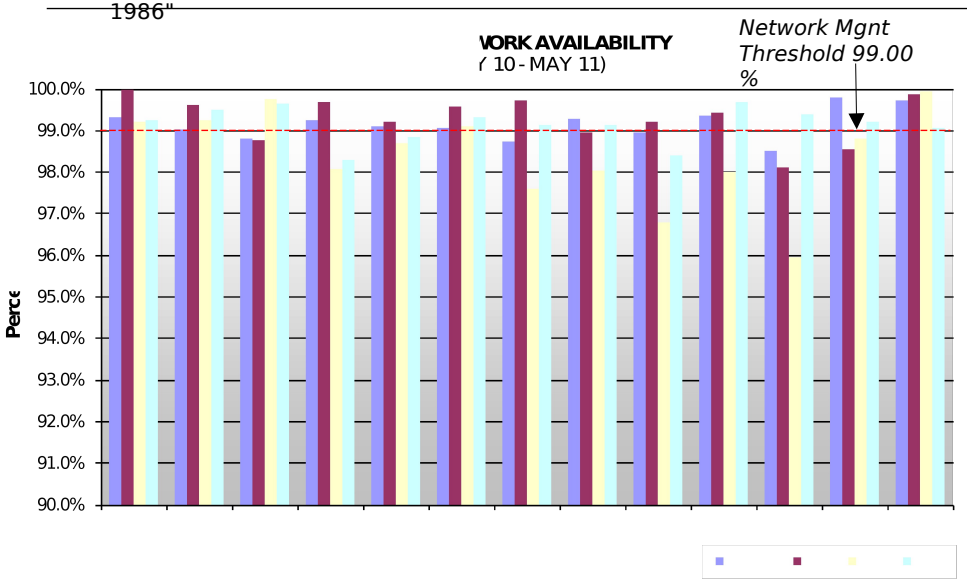

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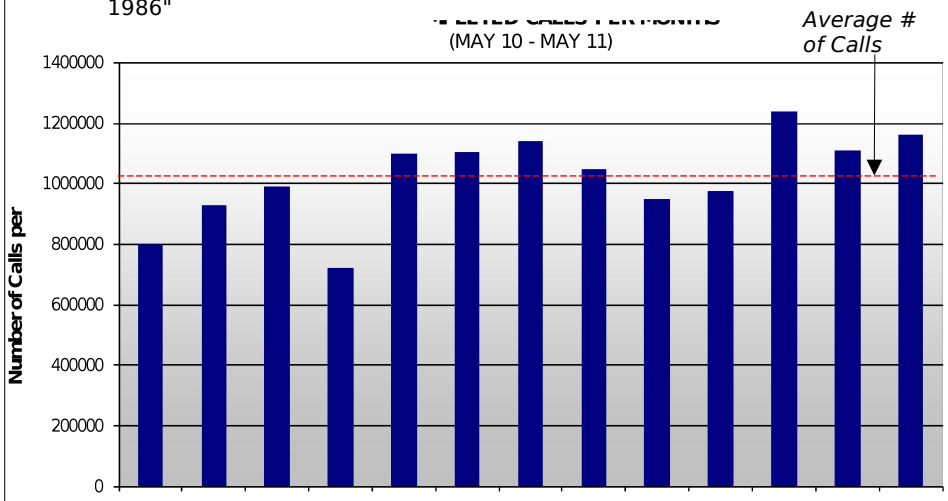

*Average number of calls from MAY-10 to MAY-11 was “1020760” calls/month

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Future of Secure Voice (Cont)

- **Pressing hard with assistance from OSD CIO to interconnect other secure voice IP networks such as JWICS, NSTS, CMS and others.**
  - **Should result in a greater degree of interoperability as well as cost savings**
  - **One instrument could support all voice requirements**
  - **Policy is impacting the capability for full connection**
- **For Now, DRSN will continue to be the provider of MLS voice and C2 Voice Conferencing capabilities with smaller footprint**
  - **VoSIP will be the "common user" adjunct to the DRSN for Secret requirements that do not require the conferencing and other MUFs that DRSN provides**
  - **DRSN likely to be the MLS arbiter for users on multiple system high VoSIP networks**

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Alternate Secure Voice Solutions

- STE/vIPer
- VoSIP
  - World-wide network (126 enclaves and over 80,000 customers)
  - Integrated with the DRSN
  - SECRET Voice ONLY
  - Low cost to implement and manage
- Other VoSIP Networks
  - JWICS
  - Other Classified Voice Networks

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Voice over Secure IP (VoSIP)

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VoSIP

- **VoSIP is the current DISN voice service that allows voice communications to be transmitted by the IP (Secret) Data service as a separate secure voice service from the traditional TDM circuit-switched service.**
- **VoSIP architecture provides a Gateway to the circuit-switched DRSN, providing interoperability between the VoSIP Service and the Secure Voice Service.**
- **VoSIP will be evolving over the coming years as we upgrade both software and hardware which will accommodate the introduction of new**

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VoSIP Update

- **VoSIP is a *"current"* DISN secure voice capability**
  - **It is part of DISA Real Time Services (RTS) and DoD CIO Unified Capabilities (UC) initiatives**
  - **It is an "accessory" to DRSN**
    - **From an accreditation perspective, VoSIP is treated as part of the DRSN**
  - ***It is not a complete replacement for DRSN***
    - **There are "technology" limitations**
- **VoSIP provides interfaces to the DRSN and other networks**

Enterprise VoSIP Architecture

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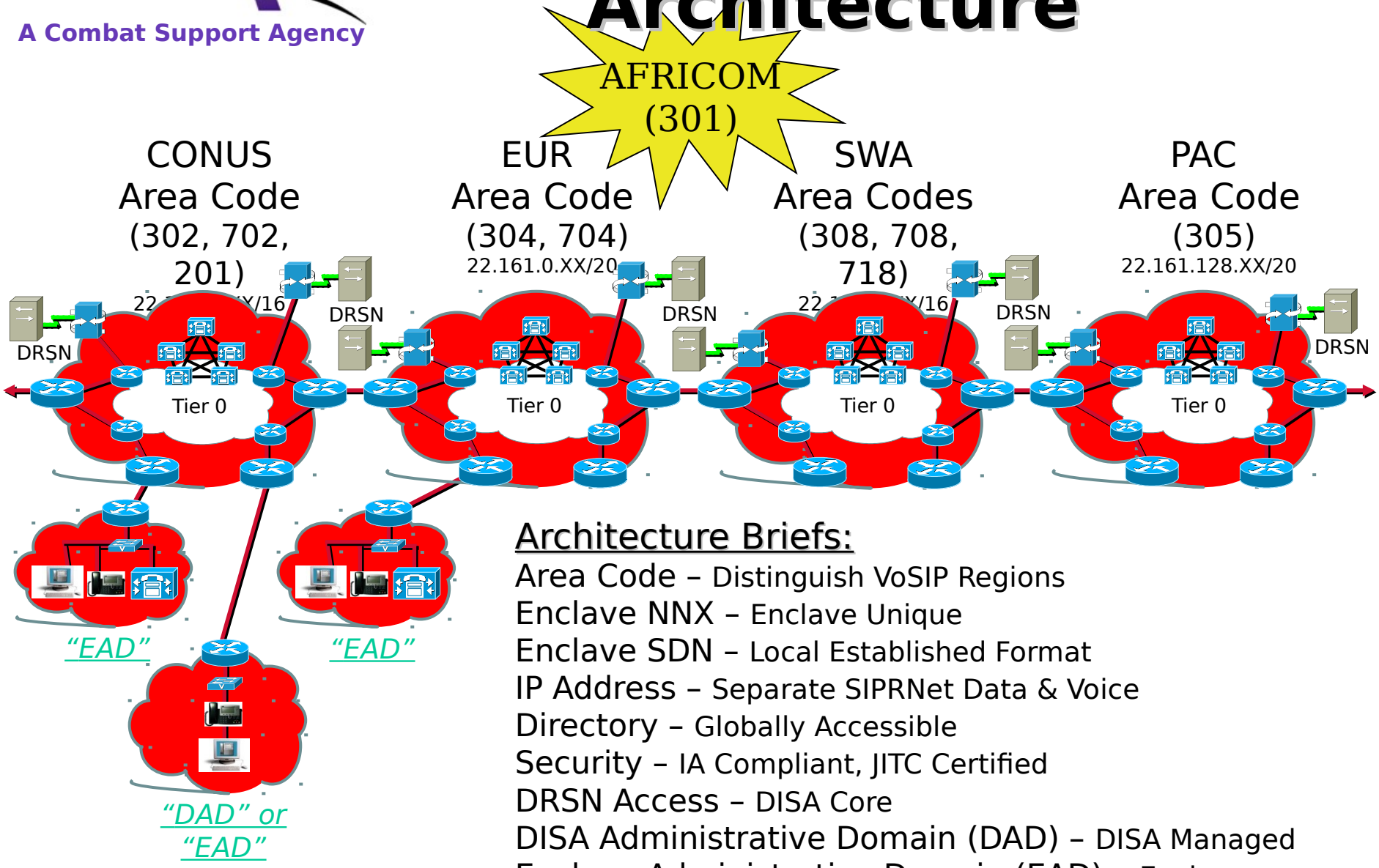

Architecture Briefs:

Area Code – Distinguish VoSIP Regions
Enclave NNX – Enclave Unique
Enclave SDN – Local Established Format
IP Address – Separate SIPRNet Data & Voice
Directory – Globally Accessible
Security – IA Compliant, JITC Certified
DRSN Access – DISA Core
DISA Administrative Domain (DAD) – DISA Managed
Enclave Administrative Domain (EAD) – Enclave Managed

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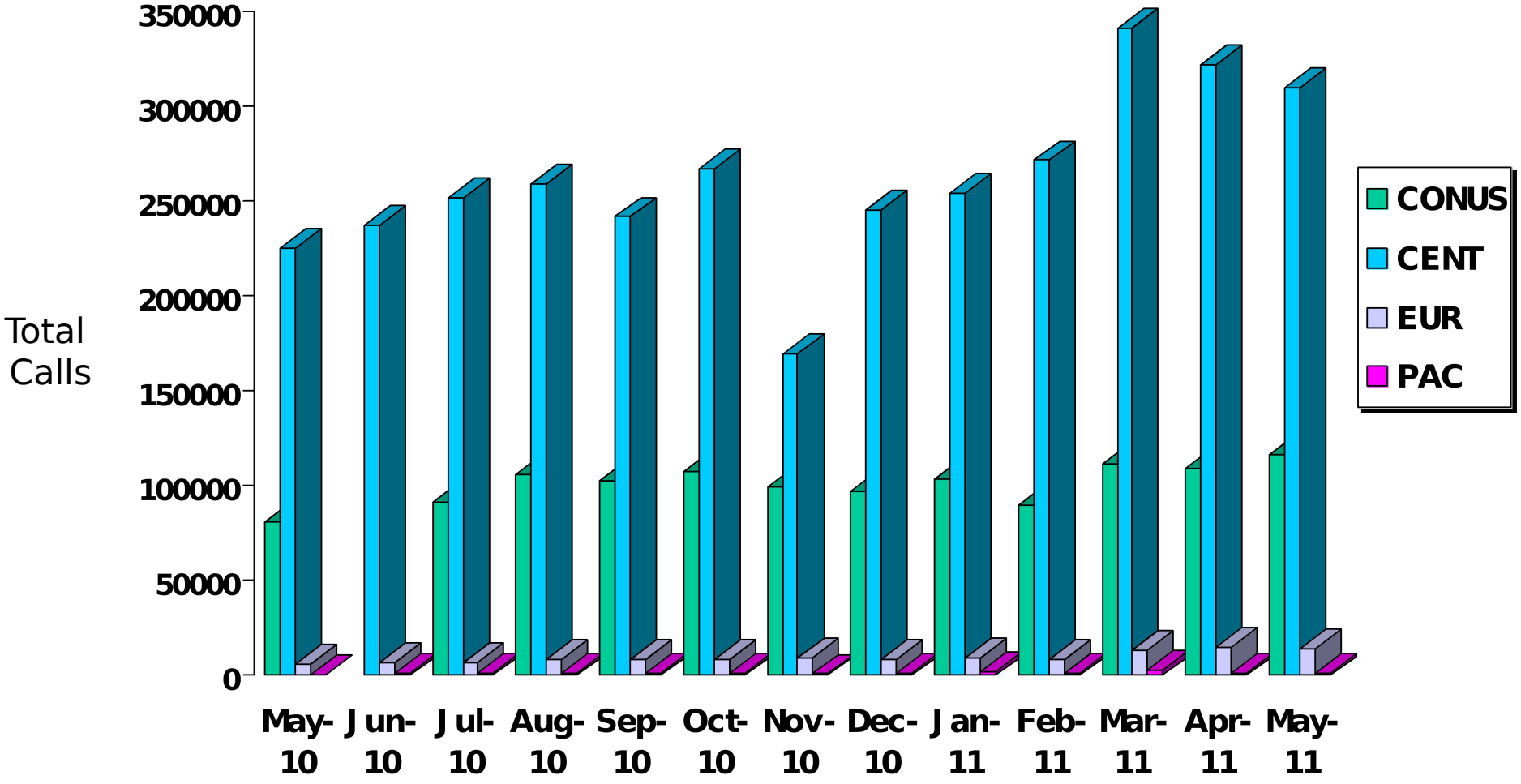
VoSIP Call Volume Summary



CONUS Data for June 2010 omitted due to loss of data during a tech refresh.
CENT Data for September 2010 an estimate due to data loss (eight days) during tech refresh. Estimate is based upon actual.

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On-going Initiatives

- **Enterprise Voice Services and Capability**
- **Interface with other classified networks (JWICS/EOP)**
- **Implementation of a VoSIP Gateway (UK/Australia)**
- **DRSN footprint reduction**
  - **Submitted a recommendation for switch decommissioning; JS processing a JSAP**

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VoSIP Projected Enhancements

- Improved “Directory” capability based on a combination of “WEB Services” and “Active Directory®”
- Implementation of a “core” conferencing capability
  - MeetingPlace®
  - User “WEB” scheduling
- Implementation of an “standardized” interface/dialing plan for interoperability with STU/STE/SCIP devices on DSN/PSTN
- Advocate the use of “Identity Management”
- Pursue spiral migration of VoSIP into applicable portions of DoD CIO/NII Unified Capabilities (UC) vision

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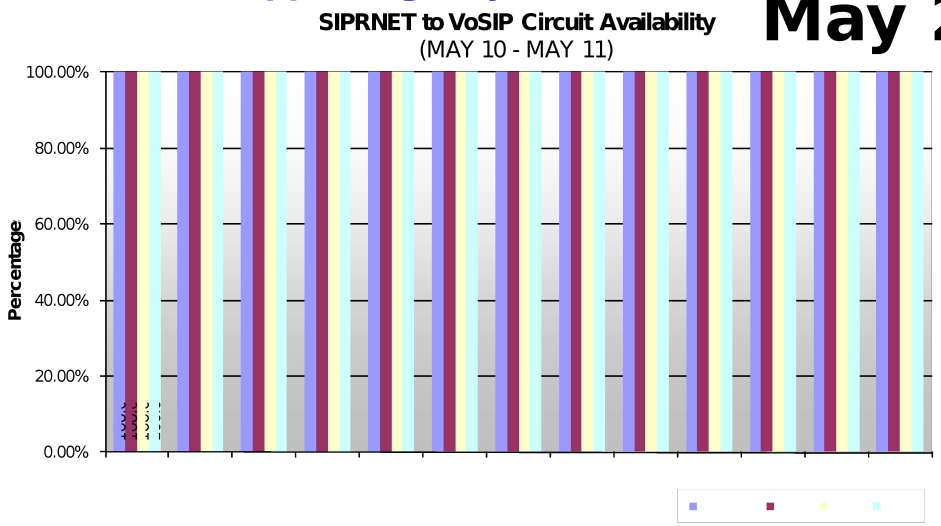
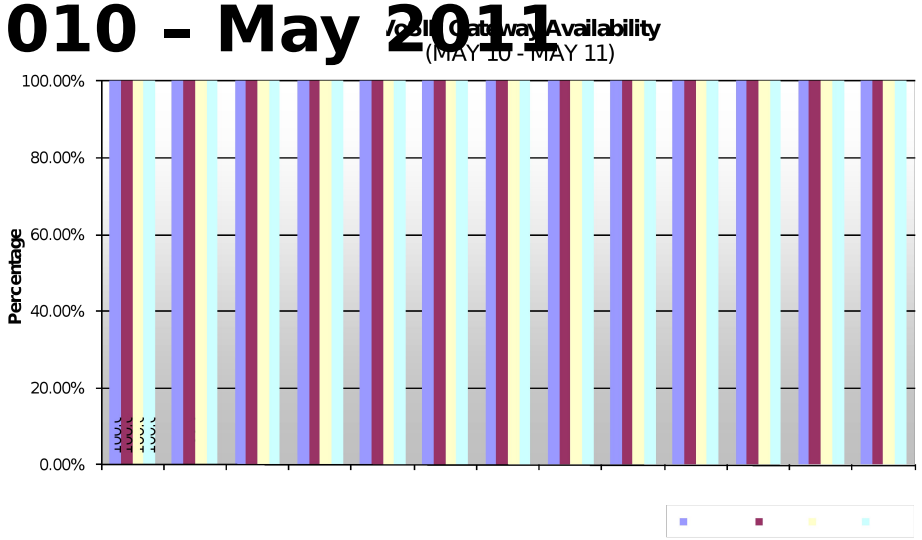
VoSIP Performance Metrics

May 2010 – May 2011



- *No reportable outages at any location (Availability % shown within standard deviations)*
- *Trouble tickets issued only when outages exceed 10 minutes*



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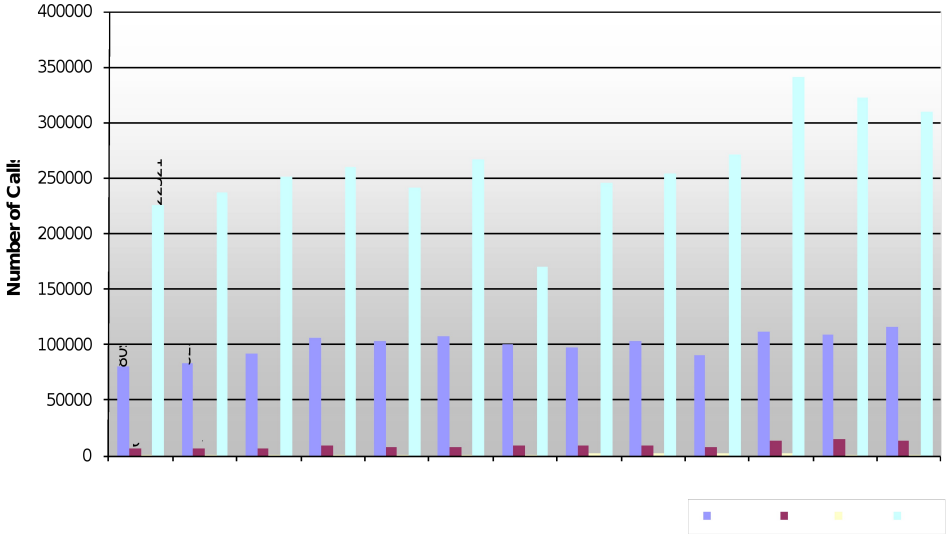

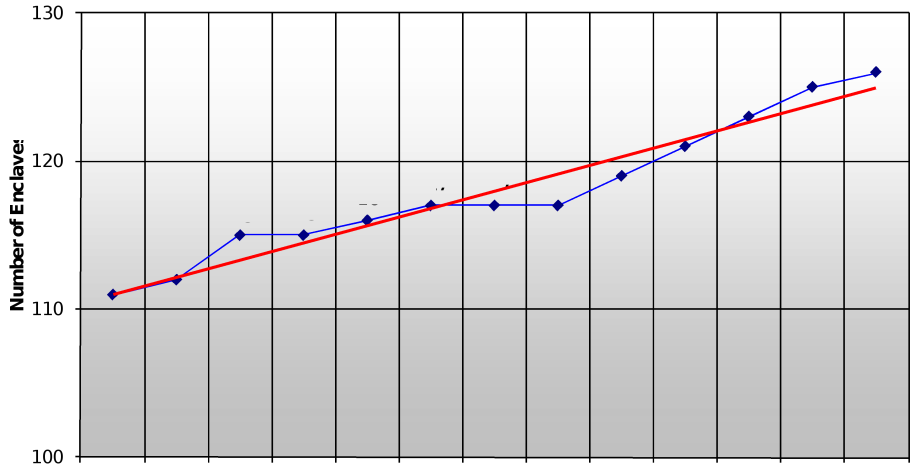

- *Total **126** VoSIP Tier 1 Enclaves are currently in the network*

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Mobility

Current SME-PED MCEP Network Architecture

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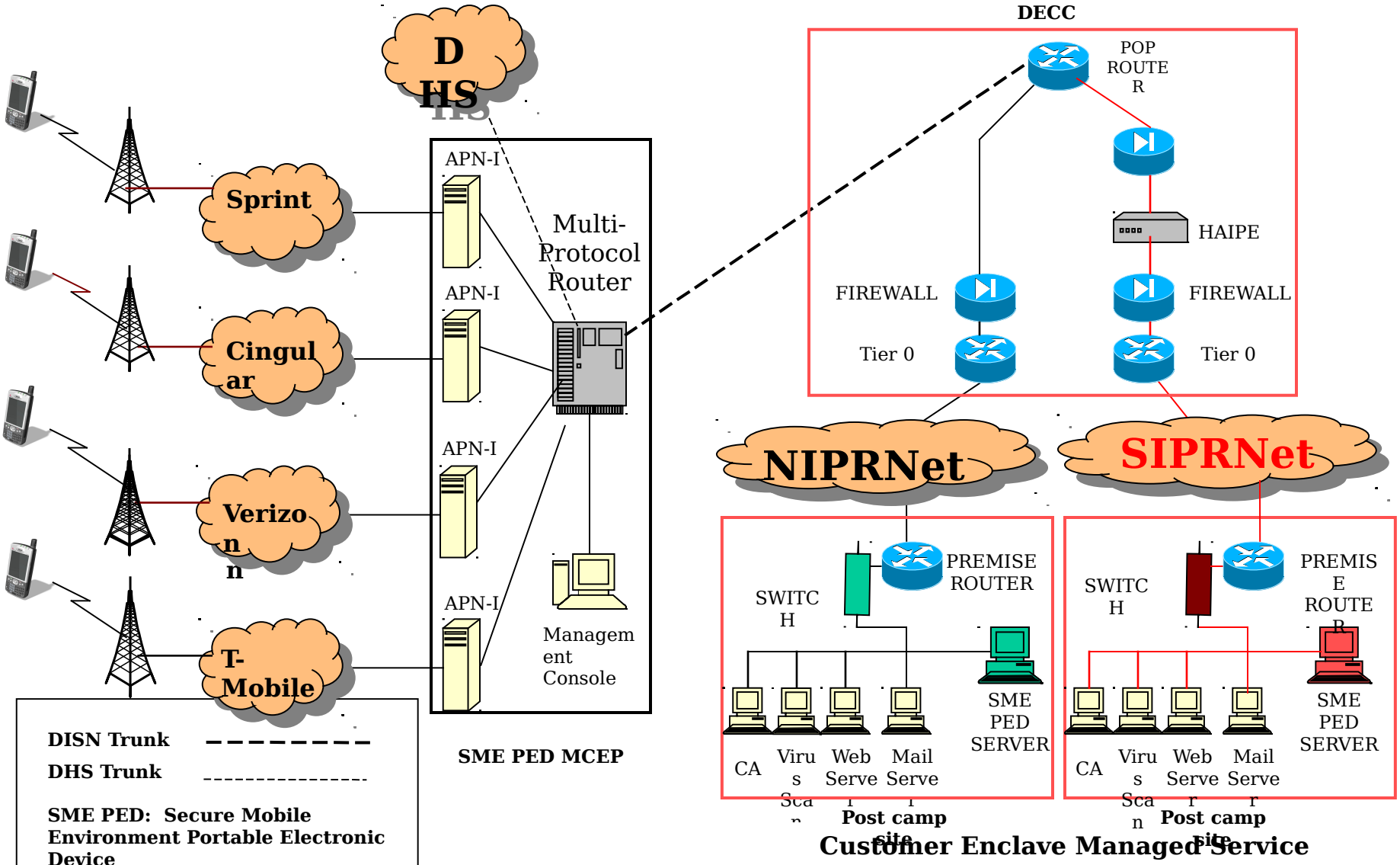

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Secure Voice - Mobility

- **Working with NSA partners on the next generation of secure mobile phones and the concept of mobility.**
  - **Will technology refresh our Multi Carrier Entry Point (MCEP) to support not only SME PED, but other NSA approved commercial secure mobile devices using Mobile Virtual Network Operator (MVNO) technology.**
  - **MVNO approach has received broad NSA and DISA support because it enhances security, management, and performance of secure mobile voice and data solutions.**
  - **Worked with NSA and developed a request for information (RFI) to industry to determine industry's readiness to delivery this capability.**
- **End goal: Ensure the network connectivity and secure mobile communications for consumption of data and services anywhere, anytime in the network**

DISA Multi-Carrier Entry Point (1&2) SME-PED

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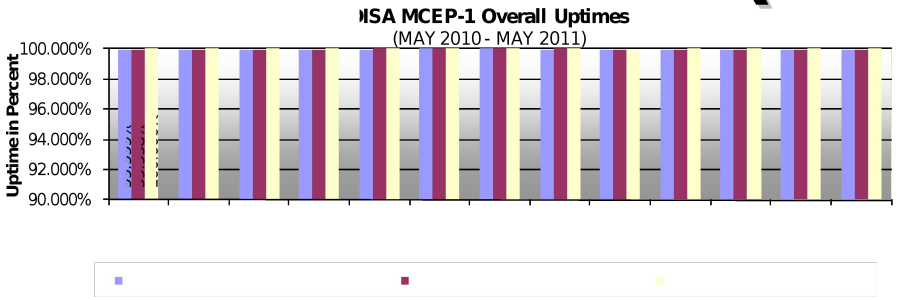
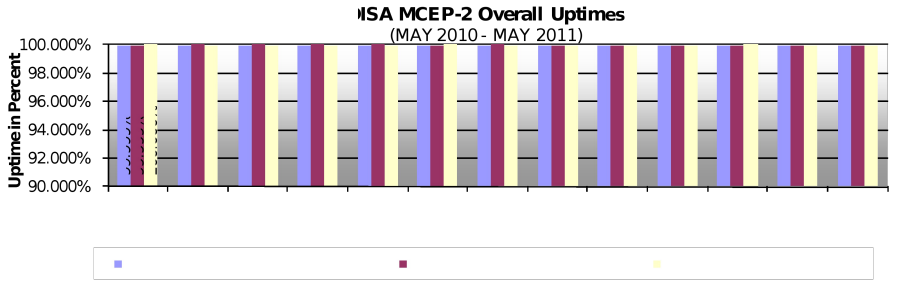
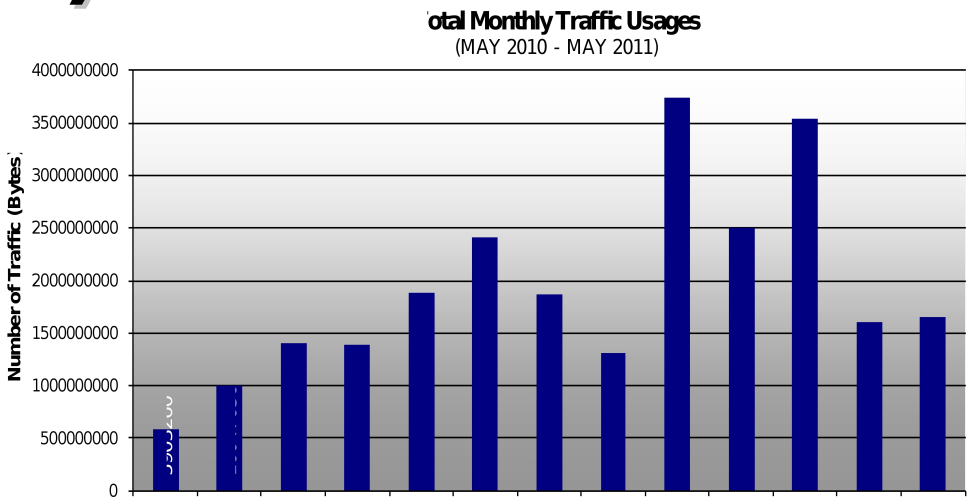
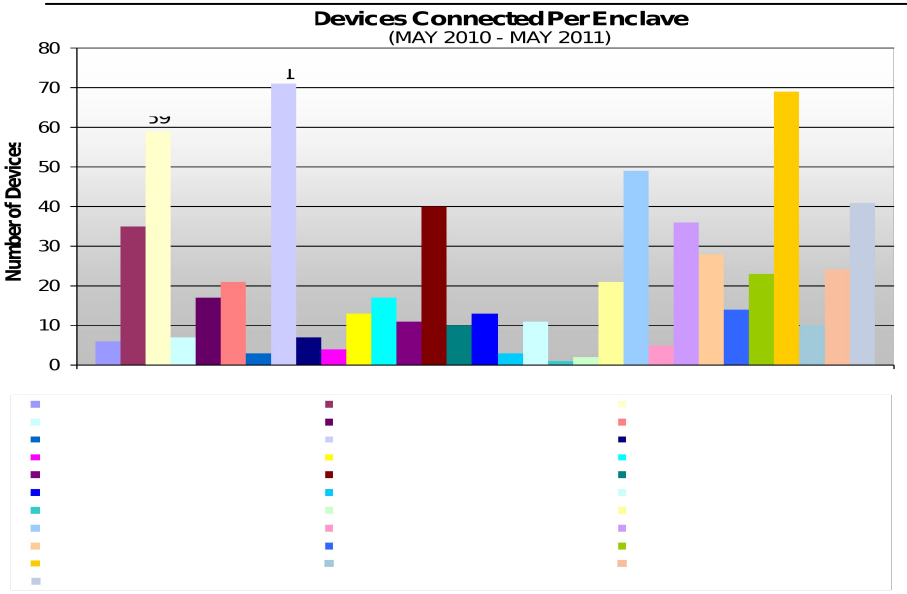
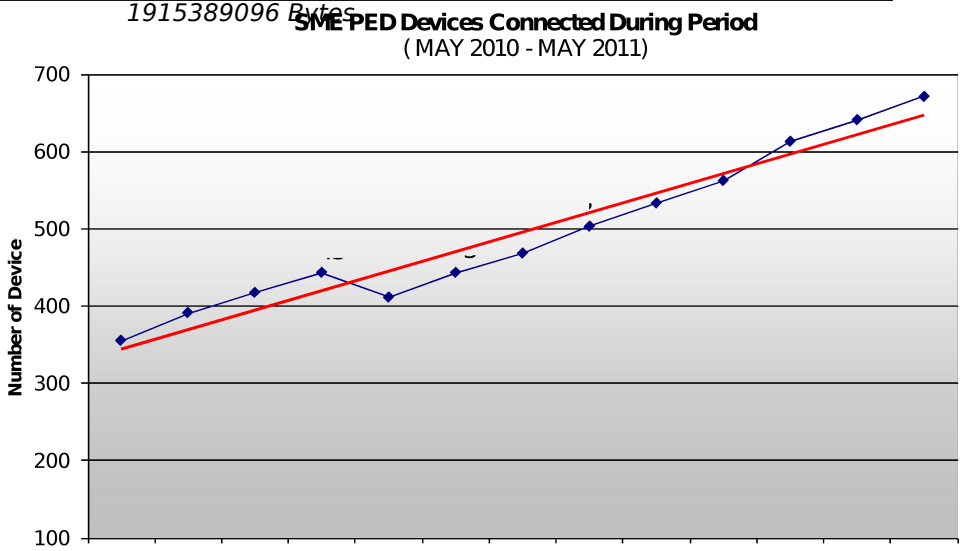






** AVG number of traffic from May-10 to May-11 was 1915389096 Bytes*





- *Total 671 SME-PED devices Connected to MCEP*

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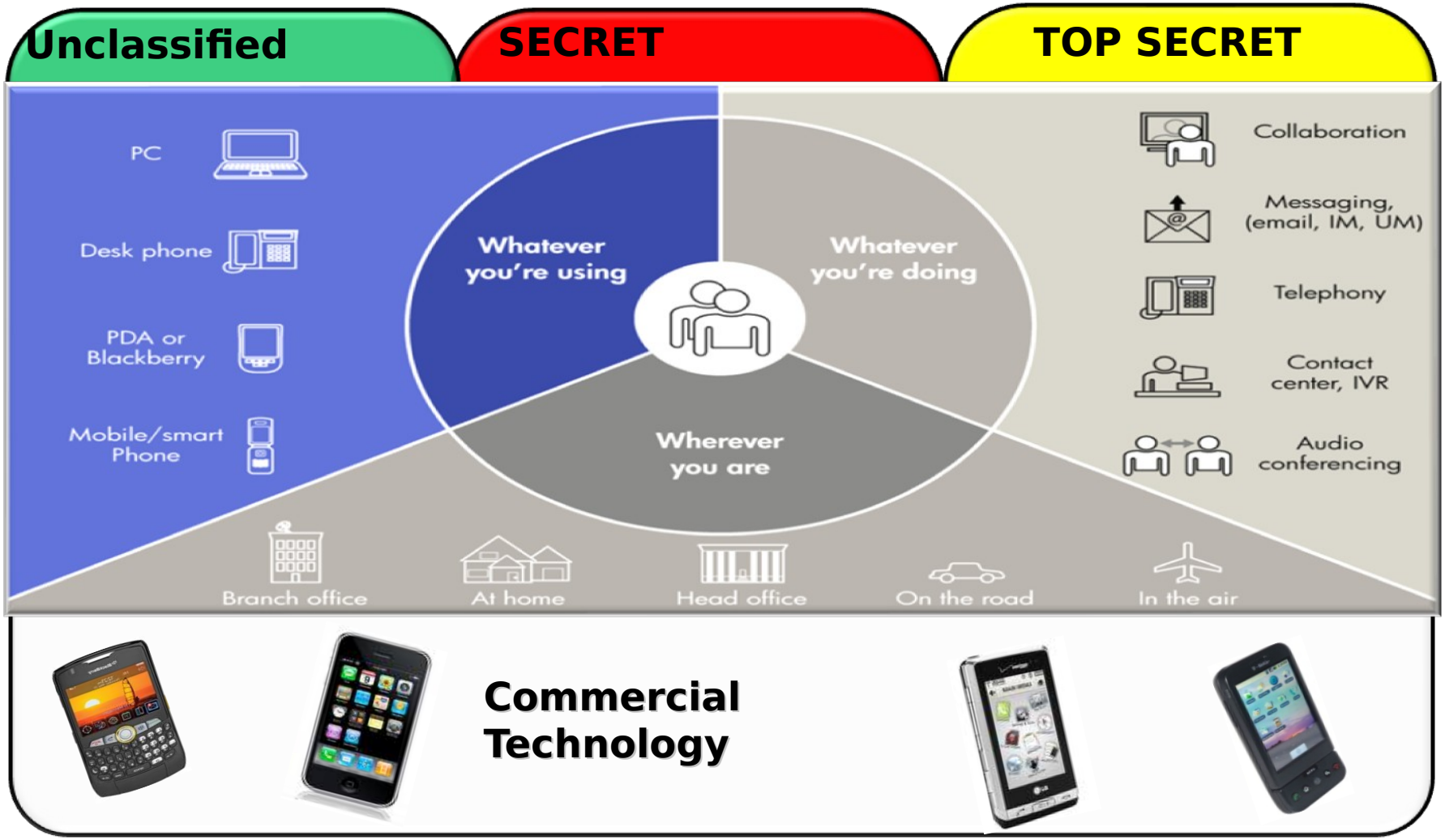
(U) Anywhere, Anytime Access



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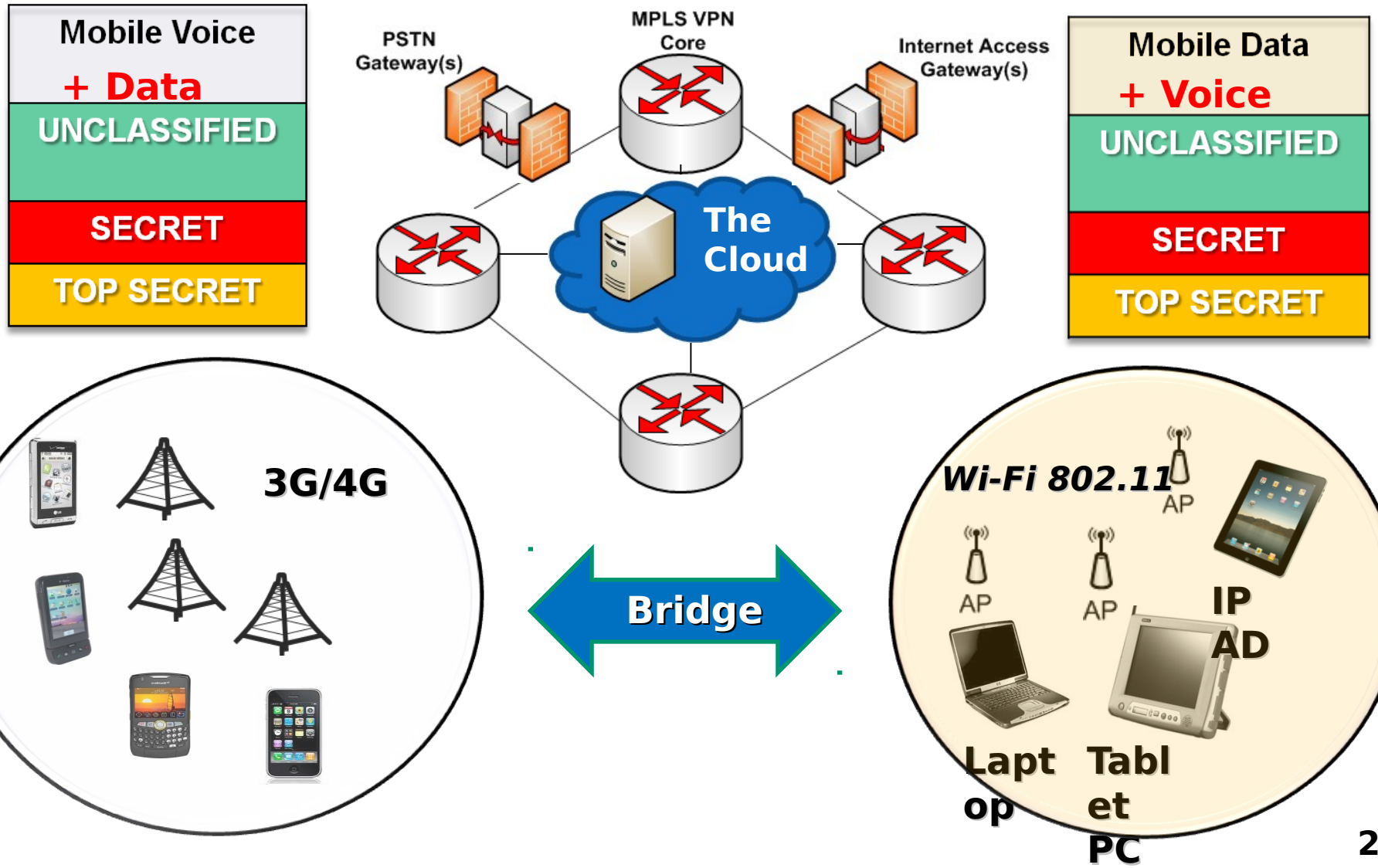
Mobility Components



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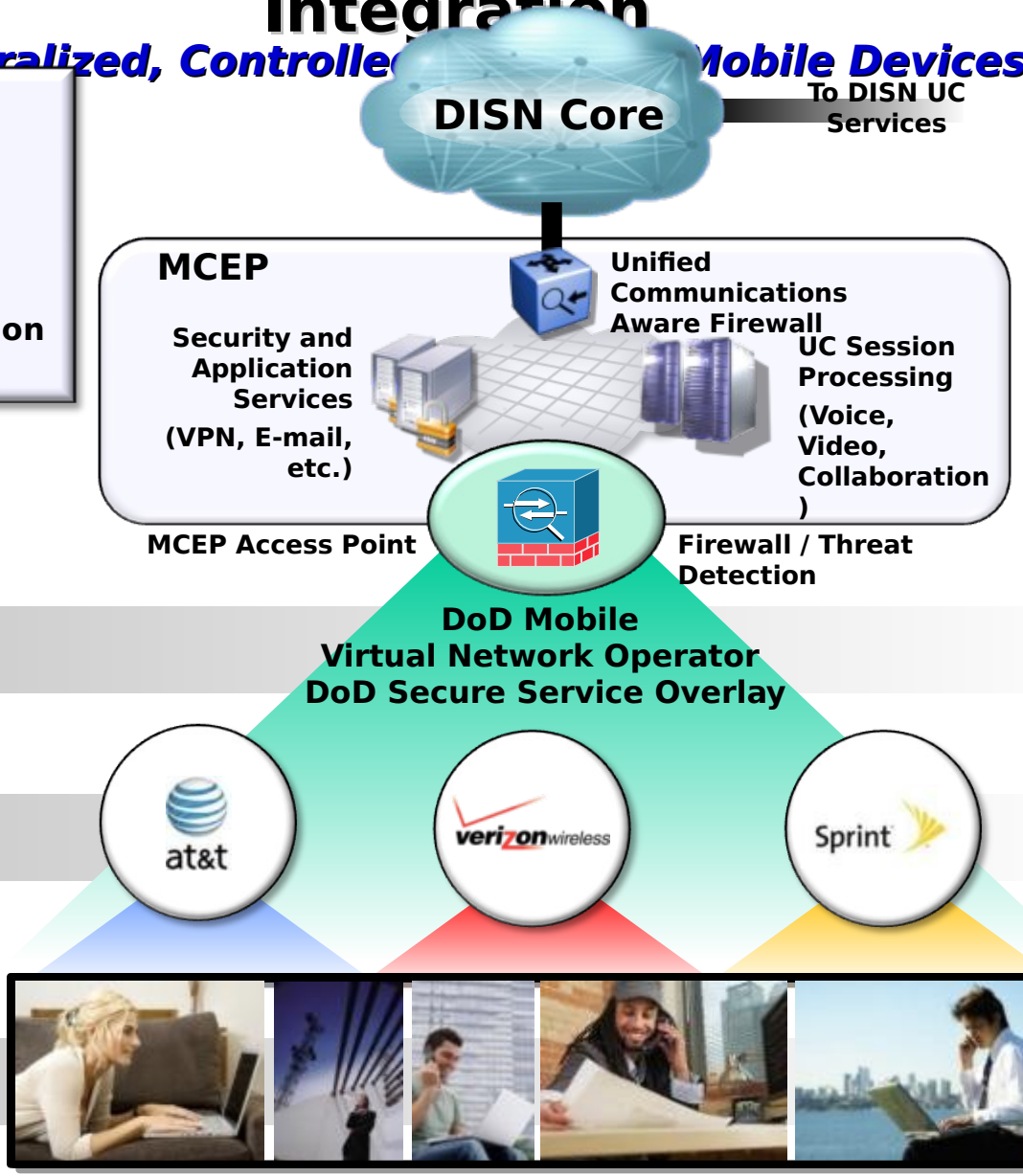
Multi-Carrier Entry Point (MCEP) /Mobile Virtual Network Operator (MVNO) Integration

Centralized, Controlle… …Mobile Devices

MCEP Key Tenets

- Create IA boundary for wireless interconnects
- Single entry point for DISN wireless extensions
- Supports DoD e-mail and collaboration
- Survivability through backup MCEPs


DISN Core
To DISN UC Services
MCEP
Unified Communications Aware Firewall
Security and Application Services (VPN, E-mail, etc.)
UC Session Processing (Voice, Video, Collaboration)
MCEP Access Point
Firewall / Threat Detection
DoD Mobile Virtual Network Operator DoD Secure Service Overlay
DoD Mobile Virtual Network Operator (MVNO) Service
at&t
verizon wireless
Sprint
Commercial Wireless and IP Service Carriers
DoD Users with Mobile Devices

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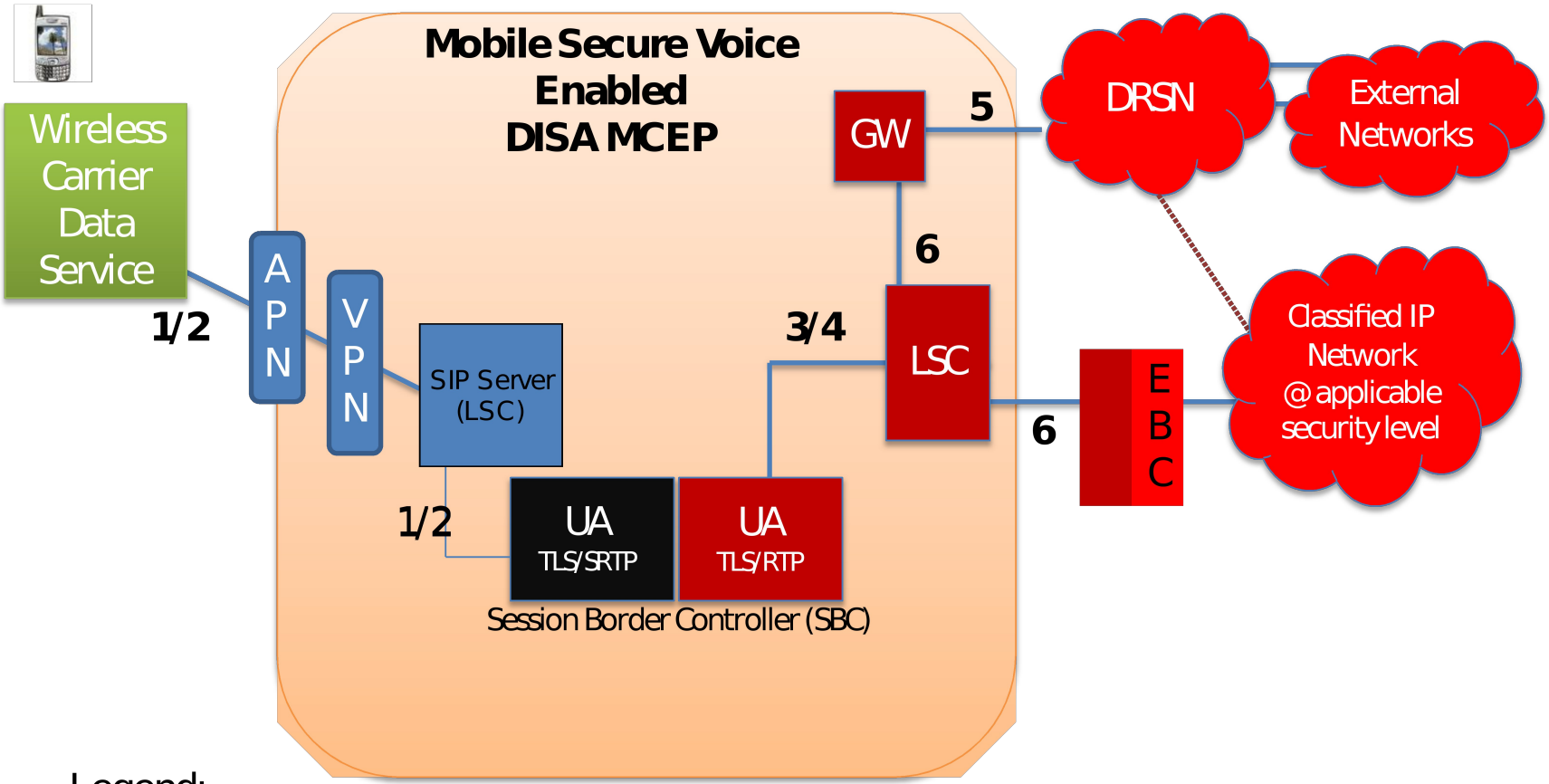
DISA MCEP
Mobile Secure Voice



Legend:

1=SRTP/DTLS
2=TLS
3=RTP
4=TLS
5=TDM/PRI
6=IP

- APN – Wireless Carrier Access Point (multiple as required)
- VPN – VPN Server – Serves to terminate VPN from Mobile Handsets
- SBC – B2BUA – Serves to terminate SRTP/DTLS Session and Generate. RTP flow
- SIP - SIP registration/Session Controller for Mobile Handsets
- LSC – To provide IP Telephony connection to classified IP Networks And to establish connection to classified TDM network through Media Gateway

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